

Plant-based diets, lifestyle habits, and metabolic dysfunction-associated steatotic liver disease (MASLD)

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What is metabolic dysfunction-associated steatotic liver disease (MASLD)?

It is the new term for the condition previously known as non-alcoholic fatty liver disease (NAFLD).

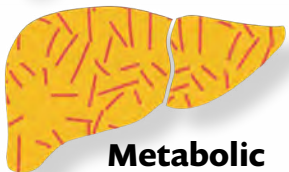
It is a term used for a wide range of conditions caused by a build-up of fat in your liver cells.



Healthy liver



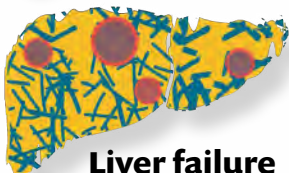
Fatty liver



Metabolic associated steatohepatitis (MASH)



Cirrhosis



Liver failure

There are four stages:

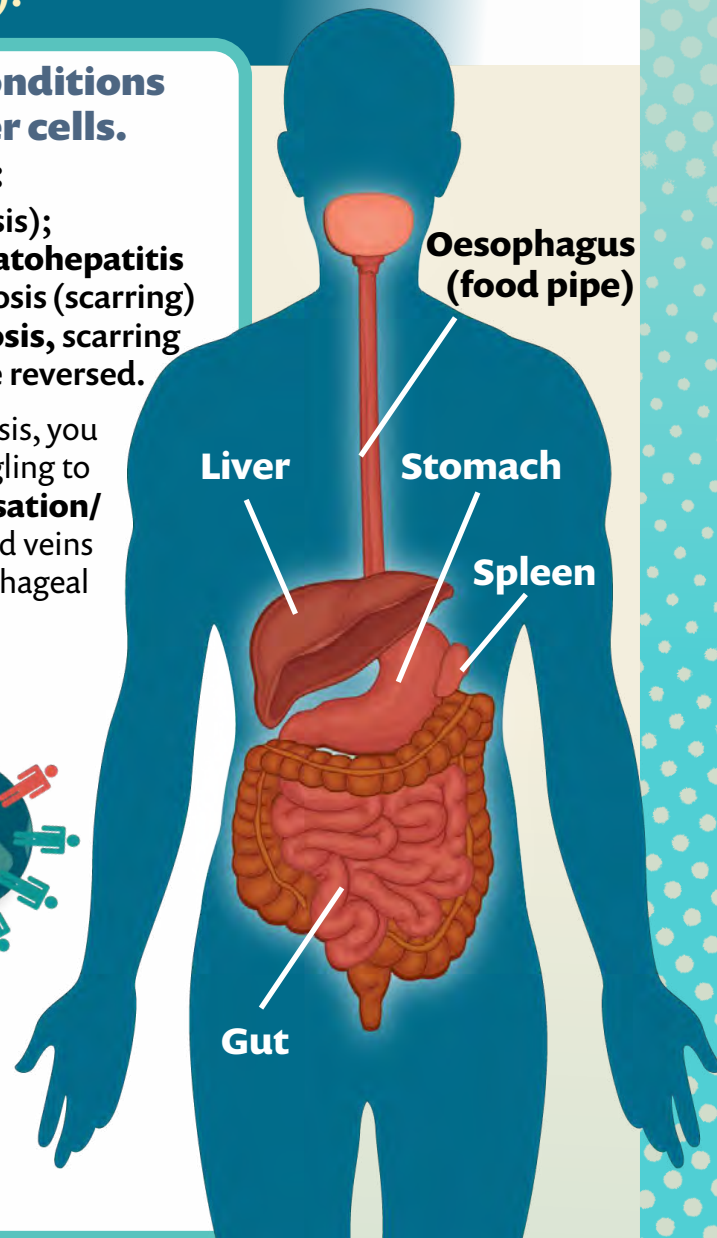
Fatty liver (hepatic steatosis); **metabolic associated steatohepatitis (MASH)** which causes fibrosis (scarring) and can progress to; **cirrhosis**, scarring of your liver that cannot be reversed.

If you progress to liver cirrhosis, you are at risk of your liver struggling to do its job (**liver decompensation/failure**), developing enlarged veins within your food pipe (oesophageal varices) that can bleed, and **liver cancer**.

MASLD is one of the commonest causes of liver disease, affecting almost **40% of people globally**.



It is also the fastest growing cause of liver cancer and one of the **commonest** reasons for needing a liver transplant.



The disease is driven by **obesity, insulin resistance, high blood lipids, and inflammation** that leads to **accumulation of fat in the liver**.

In the clinic, **MASLD** is defined by the presence of **hepatic steatosis** with at least **one of five cardiometabolic risk factors**:

- BMI > 25, >23 in Black and Asian ethnicities
- prediabetes or diabetes
- high blood pressure (hypertension)
- high blood lipids (hyperlipidemia)
- low HDL-cholesterol

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What causes MASLD?

It is primarily driven by **lifestyle factors** and is therefore **preventable and reversible**.

Key risk factors include:

- the consumption of excess calories
- a 'Western-style' diet (high in meat, saturated fat, ultra-processed foods and sugar)
- a lack of physical activity
- people at highest risk of MASLD are those living with obesity and type 2 diabetes



Screening and diagnosis

Most screening tests involve a **blood test score** and/or a **liver stiffness and fat measurement**. In some situations, a liver biopsy may be required.



Management

With limited pharmaceutical options, the primary strategy for managing MASLD is **lifestyle modification** to **reduce fat accumulation within the liver** and **prevent progression of the disease to cirrhosis**. This can be achieved through **weight loss, exercise and improved management of metabolic risk factors** such as **diabetes**.

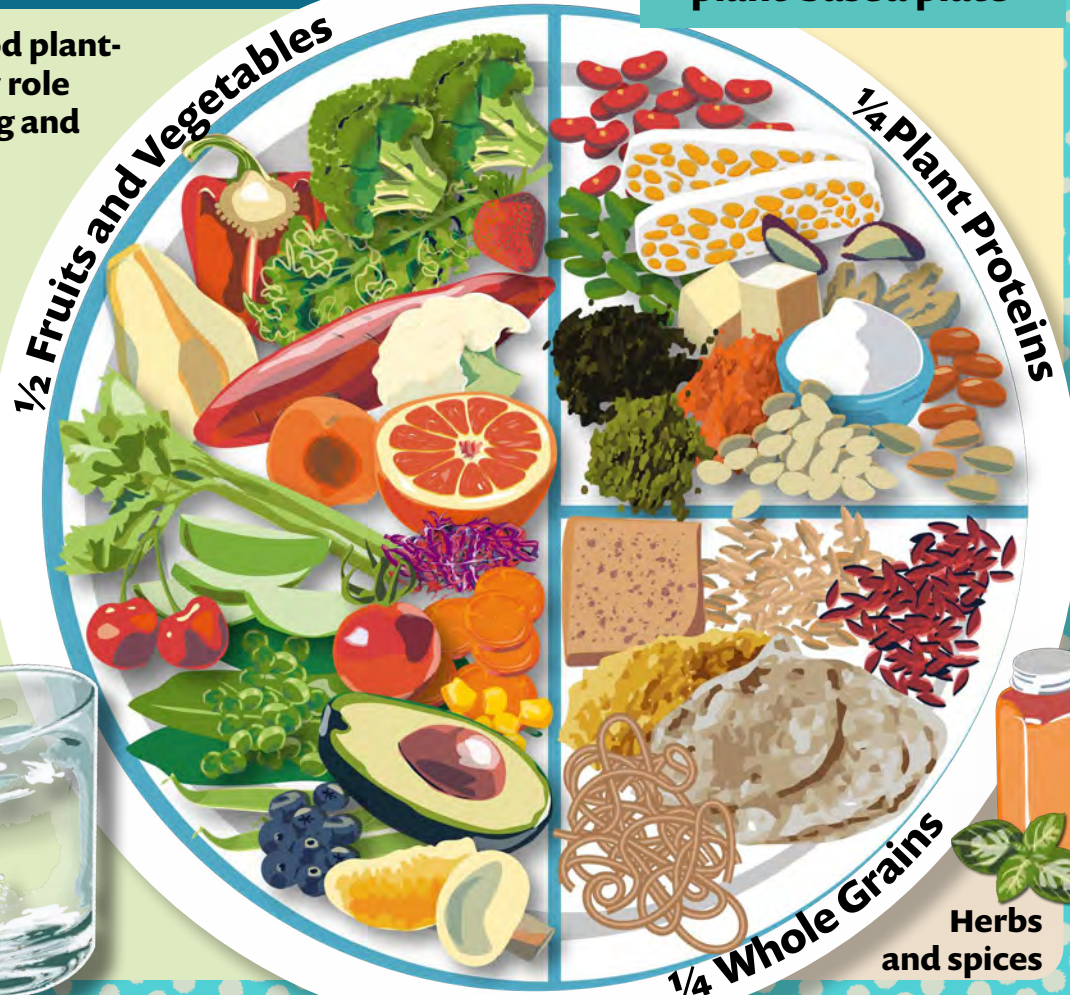


Role of a plant-based diet

A healthy whole food plant-based diet has a key role to play in preventing and managing MASLD.

This type of diet is centred around fruit, vegetables, whole grains, beans, nuts and seeds, whilst including lots of herbs and spices and mainly water for hydration. It minimises or avoids all animal foods and ultra-processed foods.

A whole food plant-based plate



Drink Water



Herbs and spices



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There are a number of advantages of eating a whole food plant-based diet:

The diet is naturally **lower in energy or calories** and hence is associated with a **healthier body weight**. People tend to be able to eat more, without worrying about calorie counting, and **feel fuller for longer**.



It is **high in fibre**, a nutrient that is key for improving health and associated with **lower rates of heart disease, type 2 diabetes, and certain cancers**, whilst supporting better gut health.

Low in saturated fat and higher in healthy fats, which helps to keep blood cholesterol level within the healthy range and thus **lowers the risk of heart disease**.



It is **high in plant nutrients** (phytonutrients) that have **anti-inflammatory properties** and help to **keep blood vessels healthy**. This results in a **blood pressure lowering effect** and **reduced symptoms of inflammation** such as arthritis.



Plant sources of protein are associated with **lower rates of heart disease, type 2 diabetes, and cancer**.



Low in refined grains and sugars, which supports a **healthier body weight** and **reduces the risk of heart disease, and type 2 diabetes**.

Consume whole fruit without worry, as the sugar in fruit comes **packaged with fibre** and lots of other **beneficial nutrients**. It's best to minimise fruit juices.

Fibre, plant protein and healthy plant fats support **better blood glucose control** and can make managing type 2 diabetes easier and even result in **remission of the condition**.



It is **adaptable to a wide range of traditional and cultural diet patterns**, including **Indian, African, Caribbean, South American** and more.

It is **delicious, nutritious and more affordable**. In general, a plant-based diet costs around **one third less** than the typical British diet.



Tarka dal



Burrito



Ethiopian platter



Jerk aubergine

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How to adopt a healthy plant-based diet

Eat a variety of :



Fruit

Vegetables



Seeds



Whole grains



Beans

TOFU

Eat at least **5 portions of a variety of fruit and vegetables a day** but aim for more, as this will have additional benefits for health.

Include a **portion of nuts** on most days - a handful is about the right size.

Include a **healthy source of protein** at each meal. All plant foods contain some protein. Higher amounts are found in **beans, pulses, lentils, Quorn™/mycoprotein, soya protein, tofu and tempeh.**



Include a **source of omega-3 fats** everyday. This can include a **tablespoon of chia seeds or ground flaxseeds (linseeds), or two tablespoons of hemp seeds or six walnut halves daily.**

Include **unsweetened, fortified dairy alternatives** such as soya milk and yogurt.



Avoid high-sugar foods and beverages, and minimise the consumption of processed foods.

Processed and packaged foods are usually high in fat, salt or sugar. Have these less often, if at all, and only in small amounts.



If you are using oils for cooking, **minimise the quantity** as oils are high in calories. Choose a high quality oil such as **extra virgin olive oil or rapeseed oil.** Avoid coconut and palm oil.



Keep **well hydrated,** mainly drinking water.

Don't forget to supplement with vitamin D in the winter months. It may be sensible to supplement all year round, regardless of diet pattern.



Tea and coffee are fine to include if you enjoy these drinks, as long as you are not adding lots of sugar. **Coffee consumption may even be beneficial for liver health.**

Make sure you get an adequate amount of **vitamin B12.** A supplement is the safest, most reliable and affordable way of ensuring this.



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Healthy habits

Gradually build up **physical activity** to meet recommendations of **150 minutes of moderate activity per week** or **75 minutes of vigorous activity per week**.

Moderate activity is when the activity you are doing **makes you breathless** so you can no longer sing but you can still speak in short sentences. **Vigorous activity** is such that even **speaking in short sentences is difficult**.

If you can, **aim for at least 30 minutes of moderate-intensity exercise**, such as brisk walking, **most days** of the week.

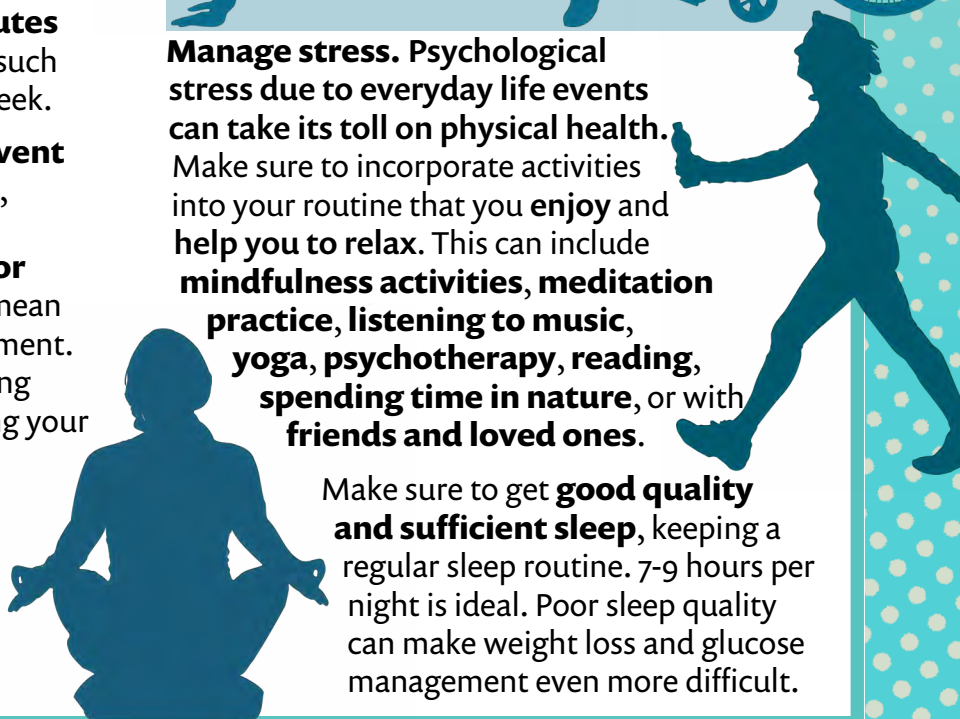
For improving health and to prevent muscle loss whilst losing weight, incorporate strength building exercises at least twice a week for 20 minutes. This does not have to mean going to the gym or expensive equipment. You can build muscle strength by using your own body weight to start making your muscles work harder.

This can include push ups, shoulder raise, abdominal crunches and squats. Using resistance bands and some light weights can be a useful addition.



Manage stress. Psychological stress due to everyday life events can take its toll on physical health. Make sure to incorporate activities into your routine that you **enjoy** and help you to relax. This can include **mindfulness activities, meditation practice, listening to music, yoga, psychotherapy, reading, spending time in nature**, or with **friends and loved ones**.

Make sure to get **good quality and sufficient sleep**, keeping a regular sleep routine. 7-9 hours per night is ideal. Poor sleep quality can make weight loss and glucose management even more difficult.



Other recommendations

Consult a dietitian

For a **personalised diet plan**, consult a registered dietitian or a healthcare professional who **specialises in liver health**.

Intermittent fasting/ time restricted eating

This can be useful for some people but be sure to discuss this with a **qualified healthcare provider** who understands your specific health conditions.

Regular check-ups with your healthcare provider are crucial to monitor the **health of your liver** and adjust your treatment plan as needed.

For more details advice on adopted a plant-based diet, please refer to our [Plant-Based Eatwell Guide](#).

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Key references and resources

<https://plantbasedhealthprofessionals.com>

Plant-Based Eatwell Guide <http://tinyurl.com/5tzc9m9m>

Free factsheets from Plant-Based Health Professionals UK www.pbhp.uk/factsheets
Plant-Based on a Budget <http://tinyurl.com/55n4n95d>

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